

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of Yoshimitsu SAKAGUCHI, et al.  
Group Art Unit : (Unassigned)  
Application No. : (Natl. Phase of PCT/JP2003/012850)  
Examiner : (Unassigned)  
Filed : (Herewith)  
Docket No. : 12477/7  
For : POLYARYLENE ETHER COMPOUND CONTAINING  
SULFONIC ACID GROUP, COMPOSITION  
CONTAINING SAME, AND MANUFACTURING  
METHOD THEREOF

INFORMATION DISCLOSURE STATEMENT

COMMISSIONER FOR PATENTS

Customer Service Window  
Randolph Bldg.  
401 Dulany Street  
Alexandria, VA 22314

Sir:

Pursuant to 37 CFR § 1.56, the attention of the Patent and Trademark Office is hereby directed to the reference(s) listed on the attached PTO-1449. Unless otherwise indicated herein, one copy of each reference is attached. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the reference(s) be made of record therein and appear among the "References Cited" on any patent to issue therefrom. The filing of this Information Disclosure Statement and the enclosed PTO Form No. 1449, shall not be construed as an admission that the information cited is prior art, or is considered to be material to patentability as defined in 37 C.F.R. § 1.56(b). The paragraphs marked below are applicable. It is believed that no fees other than those indicated below are due, but authorization is hereby given to charge any additional fees due, or to credit any overpayment, to deposit account 11-0600.

- ☒ 1. This Information Disclosure Statement is being filed (a) within three months of the filing date of a national application other than a continued prosecution application under 37 C.F.R. § 1.53(d), (b) within three months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in an international application, (c) before the mailing date of a first Office Action on the merits in the present application, OR (d) before the mailing of a first office action after filing of a request for continued examination. No certification or fee is required.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /DT/

☐ 2. This Information Disclosure Statement is being filed more than three months after the U.S. filing date AND after the mailing date of the first Office Action on the merits, but before the mailing date of a final action, Notice of Allowance, or any action that otherwise closes prosecution.

☐ a. I hereby certify that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 CFR §1.97(e)(1).

b. I hereby certify that no item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, no item of information contained in the Information Disclosure Statement was known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 CFR §1.97(e)(2).

c. Please debit Deposit Account No. 11-0600 in the amount of \$180.00 in payment of the fee under 37 CFR §1.17(p) to ensure consideration of the disclosed information. Two duplicate copies of this paper are attached. 37 CFR §1.97(c)(2).

3. This Information Disclosure Statement is being filed after the mailing date of a final action, Notice of Allowance or an action that otherwise closes prosecution, but before payment of the Issue Fee. Applicant(s) hereby request(s) that the Information Disclosure Statement be considered. Please debit Deposit Account No. 11-0600 in the amount of \$180.00 in payment of the petition fee under 37 CFR §1.17(p) to ensure consideration of the disclosed information. Two duplicate copies of this paper are attached.

a. I hereby certify that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 CFR §1.97(e)(1).

b. I hereby certify that no item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, no item contained in the Information Disclosure Statement was known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 CFR §1.97(e)(2).

☐ 4. Relevance of the non-English language reference(s) is discussed in the present specification.

☐ 5. The reference(s) was/were cited in a counterpart foreign application. An English language version of the foreign search report is attached for the Examiner's information.

6. A concise explanation of the relevance of the non-English language reference(s) appears in the Appendix attached hereto.

7. The Examiner's attention is directed to co-pending U.S. Patent Application No. \_\_\_\_\_, filed \_\_\_\_\_, which is directed to related technical subject matter. The identification of this U.S. Patent Application is not to be construed as a waiver of secrecy as to that application now or upon issuance of the present application as a patent. The Examiner is respectfully requested to consider the cited application and the art cited therein during examination of the present application.

8. This application is one of a series of related applications, identified in the attached Appendix, which are directed to related technical subject matter. The identification of those U.S. Patent Applications is not to be construed as a waiver of secrecy as to those applications now or upon issuance of the present application as a patent. The Examiner is respectfully requested to consider the cited applications and the art cited therein during the examination.

☐ 9. The reference(s) was/were cited by or submitted to the Office in parent application No. \_\_\_\_\_ filed \_\_\_\_\_, which is relied upon for an earlier filing date under 35 U.S.C. §120. Thus, copies of these references are not attached. 37 CFR §1.98(d).

☒ 10. English-language Abstracts are attached to the non-English language references.

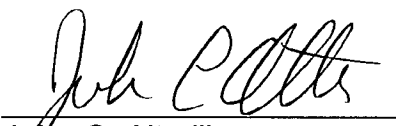
☒ 11. No copies of U.S. references are required.

☒ 12. Other: US 2002/0091225, JP 06-093114, JP 2884189, JP 63-291920, JP 2002-543224, WO 00/64951, and other articles 1-7 are described in the specification. A copy of the International Search Report is enclosed.

Respectfully submitted,

Date: 04 April 2005

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Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Complete if Known 10/530199

Application Number

(Natl. Phase of  
PCT/JP2003/012850)

Filing Date

(Herewith)

First Named Inventor

Yoshimitsu SAKAGUCHI

Art Unit

(Unassigned)

Examiner Name

(Unassigned)

Sheet

1

of

3

Attorney Docket Number

12477/7

**U.S. PATENT DOCUMENTS**

Examiner Initials *	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code <sup>2</sup> (if known)			
	1	US-2002/0091225 A1	07/11/02	McGRATH et al.	
	2	US-5,438,082	08/01/95	HELMER-METZMANN et al.	= JP 06-093114 A
	3	US-5,561,202	10/01/96	HELMER-METZMANN et al.	= JP 06-093114 A
	4	US-5,741,408	04/21/98	HELMER-METZMANN et al.	= JP 06-093114 A
	5	US-6,214,488 B1	04/10/01	HELMER-METZMANN et al.	= JP 06-093114 A
	6	US-5,596,128	01/21/97	OGATA et al.	= JP 2-884189 B
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**FOREIGN PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> - Number <sup>4</sup> - Kind Code <sup>5</sup> (if known)				
	1	JP 06-093114	04/05/94	HOECHST AG		
	2	WO 00/24796	05/04/00	FOSTER- MILLER, INC.		
	3	JP 2-884189 B	02/12/99	KONISHI CHEMICAL IND CO LTD		
	4	JP 63-291920	11/29/88	SUMITOMO CHEM CO LTD		
	5	JP 2002-543224	12/17/02	DANISCO FINLAND OY		
	6	WO 00/64951	11/02/00	DANISCO FINLAND OY		
	7	WO 99/010165	03/04/99	FOSTER- MILLER, INC.		
	8	JP 2002-220530	08/09/02	JSR CORP		
	9	JP 2003-012795	01/15/03	TOYOBO CO LTD		
	10	JP 2003-217342	07/31/03	TOYOBO CO LTD		
	11	JP 2002-367629	12/20/02	HONDA MOTOR CO LTD		

Examiner  
Signature

/Duc Truong/

Date  
Considered

10/20/2008

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450. #4966899

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /DT/

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Substitute for form 1449/PTO		Complete if known Not in Phase of (PCT/JP03/12850)	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (Use as many sheets as necessary)		Application Number	12477/7
		Filing Date	(Herewith)
		First Named Inventor	Yoshimitsu SAKAGUCHI
		Art Unit	(Unassigned)
		Examiner Name	(Unassigned)
Sheet 2 of 3	Attorney Docket Number	12477/7	

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	1	R. Nolte et al.: "Partially sulfonated poly(arylene ether sulfone) - A versatile proton conducting membrane material for modern energy conversion technologies", Journal of Membrane Science Elsevier Science Publishers B.V., Vol. 83 1993 pp. 211-220	
	2	J. Mecham et al., "Synthesis and Characterization of Controlled Molecular Weight Sulfonated Aminofunctional Poly(arylene Ether Sulfone)s Prepared by Direct Polymerization" American Chemical society, Polymer Preprints The Division of Polymer Chemistry, Inc., Vol. 41, No. 2 2000 pp. 1388-1389	
	3	Takeshi Kobayashi et al., "Proton-conducting polymers derived from poly(ether-etherketone) and poly(4-phenoxybenzoyl-1,4-phenylene)" Solid State Ionics Elsevier Science Publishers B.V., Vol. 106, Nos. 3 and 4 1998 pp. 219-225	
	4	Jasun Lee et al.: "Polyaromatic Ether-Ketone Sulfonamides Prepared from Polydiphenyl Ether-ketones by Chlorosulfonation and Treatment with Secondary Amines" Journal of POLYMER SCIENCE; Polymer Chemistry Edition John Wiley & Sons, Inc., Vol. 22, No. 2 1984 pp. 295-301	
	5	B. C. Johnson et al.: "Synthesis and Chracterization of Sulfonated Poly(arylene Ether Sulfones)" Journal of POLYMER SCIENCE: Polymer chemistry Edition John Wiley & Sons, Inc., Vol. 22, No. 3 1984 pp. 721-737	

Examiner Signature	/Duc Truong/	Date Considered	10/20/2008
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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PTO/SB/08B (08-03)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

***(Use as many sheets as necessary)***

Complete if Known  
 Nat'l. Phase of 530199  
 (PCT/JP03/12850)

Application Number

Filing Date

(Herewith)

**First Named Inventor**

**Yoshimitsu SAKAGUCHI**

## Art Unit

(Unassigned)

Examiner Name

(Unassigned)

Attorney Docket Number

124777

## NON PATENT LITERATURE DOCUMENTS

[illegible]

Examiner Signature	/Duc Truong/	Date Considered	10/20/2008
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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